Kommerell diverticulum, right-sided aorta, and left aberrant subclavian artery in a patient with dysphagia

Jenn-Yu Wu, MD,[a] Hsin-Yi Chen, MD,[a] Chin-Chung Shu, MD,[a] and Chong-Jen Yu, MD, PhD,[b] Yun-Lin and Taipei, Taiwan

Kommerell diverticulum with left aberrant subclavian artery is a rare congenital variation of vascular structure, and it can be asymptomatic or symptomatic owing to mass effect. Surgical intervention is recommended in symptomatic patients or asymptomatic patients with a large diverticulum because of possible dissection and rupture of Kommerell diverticulum. We report a case of right-sided aorta, Kommerell diverticulum, and left aberrant subclavian artery in a 36-year-old man. He had mild dysphagia and a mediastinal mass on chest radiography.

CLINICAL SUMMARY

A 36-year-old man was transferred to a pulmonary clinic with a dry cough of 2 months' duration. Mild dysphagia had been noted while he swallowed larger pieces of food since he was a teenager. He had immunoglobulin A nephropathy and was followed up at a nephrology clinic with stable renal function. He had no fever, dyspnea, chest pain, or hemoptysis. On physical examination, his breathing was smooth. No edema of the head and neck areas was noted. The blood pressure was 150/90 mm Hg, without difference between the two arms. His breathing sound was clear. Chest radiography showed a right-sided aorta and a suggestion of an upper mediastinal mass (Figure 1). Chest computed tomographic scan showed a smooth-margined saccular structure in the upper posterior part of the mediastinum with mass effect over the esophagus (Figure 2). With the chest magnetic resonance angiogram in the coronal view (Figure 3), the flow stream of the diverticulum of the patient can be traced. Kommerell diverticulum arose from the right aortic arch and infused into the left aberrant subclavian artery. Congenital variation of vasculature was diagnosed. The patient was followed up at an outpatient clinic for 12 months uneventfully.

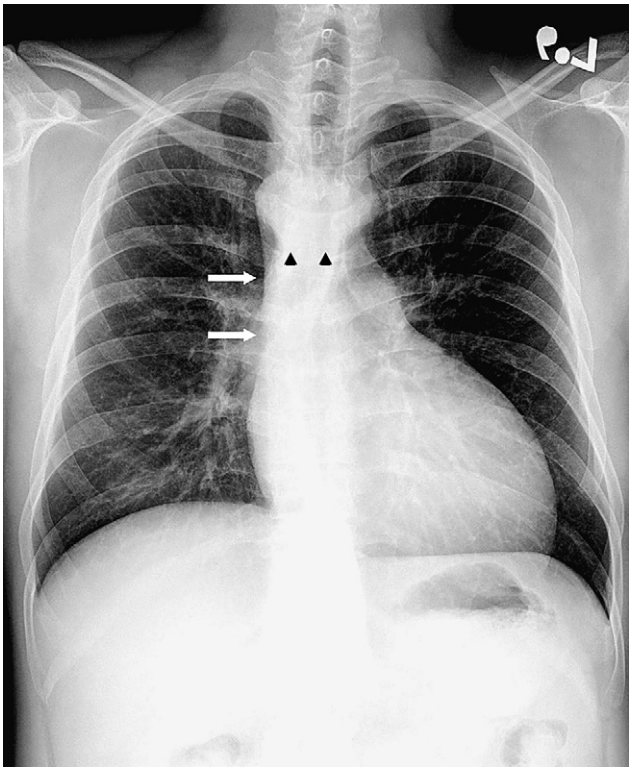

FIGURE 1. Chest radiography showed right-sided aorta *(white arrows)* and an upper mediastinal mass *(black arrowheads)*.

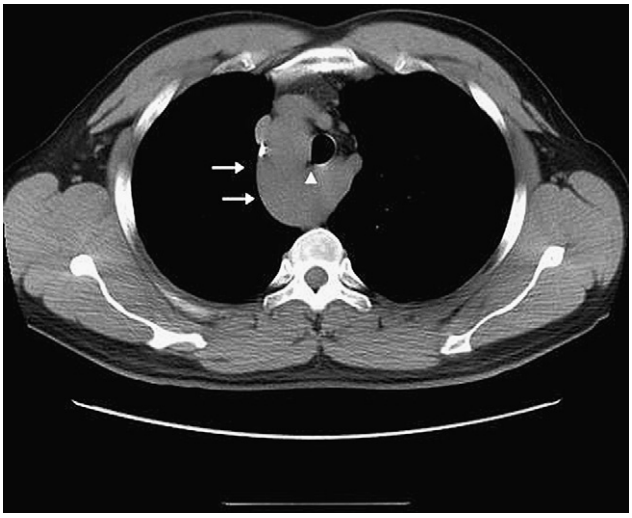

FIGURE 2. Chest computed tomographic scan shows a smooth-margined saccular structure *(arrows)* in the upper posterior mediastinum with mass effect over the esophagus *(arrowhead)*.

DISCUSSION

Left aberrant subclavian artery is a rare anatomic anomaly that originates from the right-sided aortic arch, crosses the

From the Department of Internal Medicine,[a] National Taiwan University Hospital Yun-Lin Branch, Yun-Lin, Taiwan; and the Department of Internal Medicine,[b] National Taiwan University Hospital, Taipei, Taiwan.

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Address for reprints: Chong-Jen Yu, MD, PhD, Department of Internal Medicine, National Taiwan University Hospital, #7 Chung-Shan South Rd, Taipei, Taiwan (E-mail: jefferycjyu@ntu.edu.tw).

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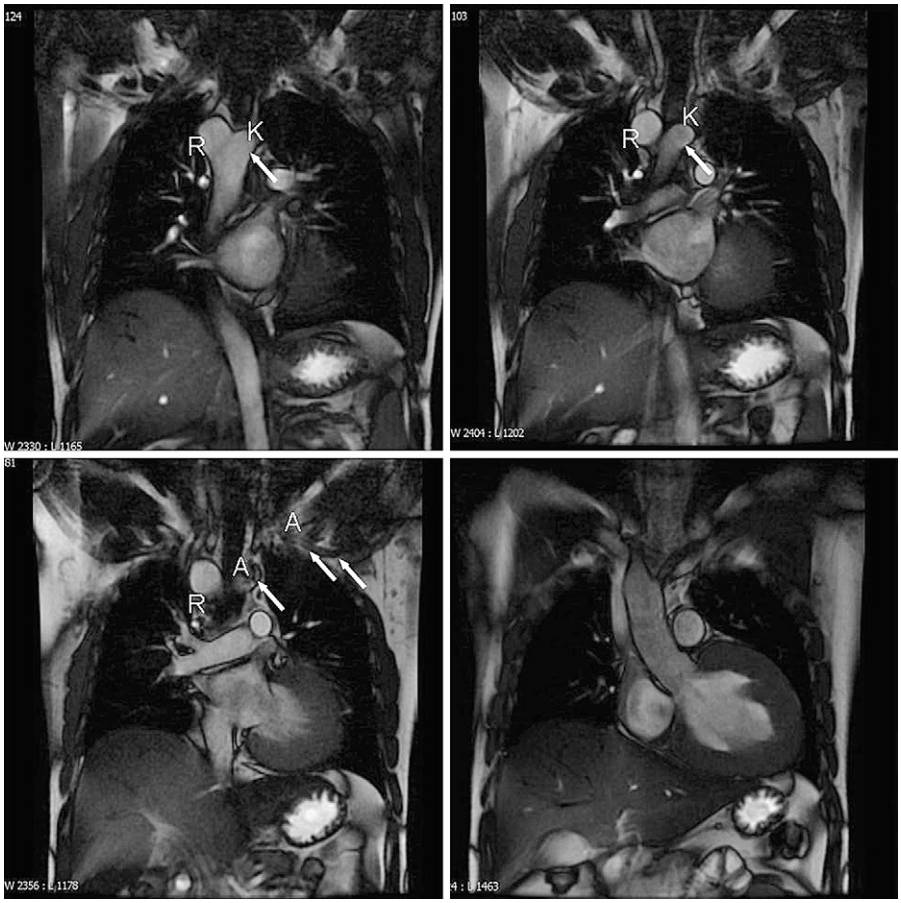

FIGURE 3. Chest magnetic resonance angiograms in the coronal view show flow stream *(arrows)* of Kommerell diverticulum *(K)* from the right-sided aortic arch *(R)* to the left aberrant subclavian artery *(A)*.

posterior part of the mediastinum, and drains into the left upper limb. Right-sided aorta is present in 0.04% to 0.1% of the population, and 50% of right-sided aortic arches are associated with an aberrant left subclavian artery.[1,2] Some patients with left or right aberrant subclavian arteries have an obviously dilated part of the origin of the aberrant artery from the aorta, and the dilated part is called Kommerell diverticulum or Kommerell aneurysm.[1]

Kommerell diverticulum and aberrant subclavian artery can be discovered accidentally in asymptomatic children or adults, but sometimes they are associated with complications, such as compression of adjacent structures, dissections, or ruptures. Compression of the esophagus may cause dysphagia, termed as dysphagia lusoria.[3] Compression of the recurrent laryngeal nerve that causes nerve palsy and hoarseness is known as Ortner syndrome.[4] Dissection and rupture of an aberrant artery and Kommerell diverticulum were reported in 20% to 50% of patients.[2]

Standard management options of Kommerell diverticulum are not established because of the rarity of this anomaly.[2] Generally speaking, surgical intervention is recommended in symptomatic patients or asymptomatic patients with a large diverticulum.

In brief, Kommerell diverticulum with left aberrant subclavian artery is a rare variation of vasculature. It can present with a mediastinal mass, and patients with Kommerell diverticulum can be asymptomatic or have symptoms such as dysphagia.

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